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APHORISMS

on the

SMALL POX;

Tending to inveſtigate the true nature of the diſeaſe, whether acquired by contagion, or inoculation.

And,

To manifeſt the ſuperior rationality and excellence, of the modern, over the antient method of its treatment.

By a Member of the Royal College of Phyſicians,
(Will. Baylies, M.D.)

LONDON

Printed for the Author.

ANNO DOMINI,

MDCCLXVIII.

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SMALL POX,

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MVSEVM BRITANNICVM

By a Member [illegible] College

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THE INTRODUCTION.

The following pages are the reſult of a deliberate peruſal of the moſt celebrated authors on the ſmall pox, joind to above twenty years experience in the general practice of phyſic, and in that diſeaſe in particular; both when it had been acquired by natural infection, and by inoculation; in the courſe of which, many material facts having been obſerved demonſtrative of its nature, and of the principia, on which the old and new method of its treatment was founded; the author, for his own private uſe collected them together into the

form of aphoriſms, as the moſt conciſe, and beſt adapted for the retention of the memory. And as each aphoriſm, is a clear and diſtinct obſervation of itſelf, tho perhaps deduced from, or leading to ſome other; he has not paid that regard to the order of their ſucceſſion as would have been neceſſary, had their matter been to be digeſted into a regular eſſay. It is hoped therefore, that that reaſon, will ſufficiently apologize for offering them under the ſame arraingement to the public, together with ſuch queſtions founded thereon; as by being duly conſiderd, may tend to remove particular doubts, and to enable thoſe who have learned how to manage the diſtemper from experience alone; to aſſign the real cauſe of the effects, which they ſo certainly and happily know how to produce; without which, their practice muſt be empirical, and their ſucceſs how great ſoever,

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the reſult rather of chance than of true knowledge. It is not meant by this, to depreciate any mans merit, but inſtead thereof, to ſecure every one that reputation to which he is juſtly entitled; whether it be that of ſerving the public in conſequence of being the child of fortune; or, an induſtrious inquiriſt into the principles of nature and ſcience. Much, it muſt be confeſſed in every branch of knowledge has been owing to the former, as well as the latter; upon which ſubject, the inſufficiency of human learning wrote by the ingenious Mr. Baker, is a moſt entertaining volume; and the new method of treating the ſmall pox an additional proof. This I am juſtified in aſſerting from the teſtimony of the learned Boerhaave, who in his aphoriſms on the ſmall pox, has not only shewn himſelf a moſt skilfull and ſagacions phyſician; but has likewiſe told us that at the

time

time he wrote, "inſtances were not wanting of the method now practiſed having proved ſucceſsfull, even when phyſicians had uſed it without knowing of the diſeaſe." But it being the diſcovery of accident or deſign can afford no argument againſt the merit of the practice, as its rectitude is now rendered indubitable by unparallelled ſucceſs; neither can it be a reaſon why the perſon who firſt invented or eſtablished the art should be grudged its benefits; for was every fortunate perſon to be deprived of the advantages which may have accrued to him from accidental events, few; very few there are, who could boaſt acquiſitions; it being a well known truth, that chance much more than deſign is the promoter of us all; and that to the benefits of her favours where ever she beſtows them, the poſſeſſor is as juſtly entitled as to any other of his property which it would be

FACTS

tending to demonstrate

THE TRUE NATURE

OF THE

SMALL POX &c.

One solid practical observation is of more real value, than all the unsupported theories which the wit of man ever invented.

BAKERS INQUIRY p. 4.

FACTS

tending to demonstrate

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be the higheſt injuſtice to take from him without a ſuitable recompenſe. Yet I would not be thought to commend the retainment of any uſeful diſcovery conducive to the health of the people from the knowledge of the public; tho confeſſedly the property of the inventor; nor would I cenſure the ingenious for attempting to unfold by all honourable means, whatever the experience of others has proved to be uſeful. But when any one medicine or medicines, or, any one or more cauſe or cauſes, either ſeperatly or in conjunction have been found to be effectual in the preſervation of life from the danger of any known diſtemper; who can deny that the recommending any thing to the public for ſuch medicine or medicines however ſimilar, if not known to be actually the ſame; or, that to undertake the diſeaſed without a knowledge of all the concurring cauſes neceſſary

to the cure, is an unwarrantable act, undeserving of encouragement; and the product of selfishness or envy, rather than of a public spirit or emulation, which are always praise worthy? But leaving this digression if the matter of these sheets is any ways conducive to a better understanding of the nature of the small pox; or affords reflections which strike out new lights towards the relief of any other disease; the author will think him self extreamly happy; and in hopes of it, submits them to the public without any other apology.

FACTS

FACTS.

No. I.

The ſmall pox is a diſeaſe, to which almoſt all, tho not every individual is liable; and which being once had, has not by one in a million, if in a ſingle inſtance, been had a ſecond time.

No. II.

It is a diſeaſe which may be undergone before, as well as after birth.

No. III.

It has been contracted by an unborn infant, without manifeſting any thing of its effects on the mother; the mother having undergone it before she was entient.

No. IV.

Children have come into the world with the eruptions of the ſmall pox upon them, having been born at a time of their mo-

thers having the diſeaſe; and others have been born with the marks only of the eruptions on their bodies, long after their mothers have, during their pregnancy with them, recovered from it.

No. V.

Thoſe whoſe mothers have had the ſmall pox while entient with them, are thereby equally ſecured from future infection, as they could have been, by their having had the diſtemper ſubſequent to their births.

No. VI.

Perſons who have had the ſmall pox, and are thereby renderd incapable of being infected with it again; beget and bear children equally liable to it, as if they themſelves had never had it.

No. VII.

What the primary cauſe of the ſmall pox is, no one has as get clearly determined; but whatever it be, it operates on the blood in a certain manner, and is productive of ſalutary or morbid effects; according to the ſtate and nature of the blood, at the time of its reception.

No. VIII.

No. VIII.

The maſs of blood is a mixed fluid containing all the various ſecretory animal juices, every of which has its particular properties and maladies. Its ſalubrity depends upon a due mixture of theſe juices together by a proper degree of motion; whence it is ſubject to ſuffer a conſtant waſte, and of which, it is again recruited by a ſupply from our aliments.

No. IX.

All thoſe who have been cut off by the ſmall pox, have before death been attended with a train of certain particular ſymptoms; the nature of which being duely conſidered, evidently manifeſts the true quality of the variolous virus, which may juſtly be called a poyſon *ſui generis*.

No. X.

Its ſecondary cauſe, or, that by which its primary one is put into motion, is communicable to the body from others that have it; either by effluvia through the inhaling veſſels of the skin, or the reſpiratory organs; or, by immediate contact with the circulating fluids in any wounded lymphatic or ſanguiferous veſſel on any part of the body.

No. XI.

No. XI.

When the communication of the diſeaſe by inoculation was began to be uſed in England; infection was intentionally conveyd by effluvia through the noſtrils to ſome; as well as by contact with the circulating blood in inciſſions to others: whence, experience proved that thoſe who received it by effluvia, had inveterate head-achs and a difficulty of reſpiration; which thoſe who were infected by inciſions had not.

No. XII.

Of late great improvements have been made in the practice of inoculation; whence tho it be an art of but a few years eſtablishment; from the great difference in the manner of it now, to what was formerly uſed; we are entitled to diſtinguish them by the names, of the old and new method of practice.

No. XIII.

In the old method of inoculation, inciſions were uſualy made quite through the true skin; and the communicated infection laid on, if not immerſed in the membrana adipoſa: in the modern method; it is communicated only into the cuticular lymphatics by the flighteſt ſcratch.

No. XIV.

In the old method of inoculation, immediatly after the operation plaiſters were uſed over the inoculated part, and great dependence was placed in thereby attracting a free diſcharge of variolous matter from the inciſions.

No. XV.

In the modern method of inoculation no plaiſter is at all applyd; but the communicated infection is leſt on the part, to produce its own proper effects; and to manifeſt its progreſs by mixing with, inſtead of being attracted from the blood.

No. XVI.

Threads, moiſtend with the blood of perſons who have the ſmall pox, inſtead of ichor from the inoculated parts, or the matter in the puſtules; are found never to infect by inoculation: tho thoſe moiſtend in the fresh and warm ichor or matter, ſeldon fail to bring on the diſeaſe by the ſlighteſt puncture; in which the venom ſo uſed, ſeems to produce its effects, as in the bite of a viper.

No. XVII.

No. XVII.

The minuteſt particle of the variolous infection, is as certainly efficacious in communicating the diſeaſe to the blood, as is the largeſt quantity; and its action has been juſtly compared, to that of a ſpark or a large coal of fire, brought into contact with a quantity of gun powder; either of which, is univerſally known to produce the ſame effects on the powder as the other.

No. XVIII.

As water united with the particles of gun powder before it comes into contact with any atom of fire, leſſens the power of the fire thereon; ſo the regimen and medicines uſed previous to and after inoculation, impede the inflameability of the blood and humours, by the variolous infection; and ſeems to be the cauſe of the great difference, between the violence and danger of the natural and inoculated ſmall pox.

No. XIX.

By the old method of inoculation, infection was communicated with matter in its higheſt parulency; but by the modern before any change has been made in its natural quality after its ſecretion from the blood,

blood; or, rather at the time it is beginning to act upon, and assimilate with it; even before the commencement of the eruptive fever; when experience shews it infects with the greatest certainty; and that its being purilent, is by no means necessary or essential for that purpose.

No. XX.

Whether the variolous matter be received naturally by effluvia, or artificially by inoculation into the blood; it does not instantly manifest its effects thereon, but in every constitution requires a given time for that purpose; tho the given time which is generally found necessary, is often exceded; and on the contrary, some times shortened, in particular habits.

No. XXI.

Our bodies either naturally or from some accidental cause, are not at all times capable of taking the infection; even tho we have not before undergone the disease.

No. XXII.

It has never yet been demonstrated, however aserted, that the secreted matter or small pox virus, which is seperated from

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the blood into the puſtules, and with which inoculation is made; has ever carried with it the ſeed of any other diſtemper; any more, than that the different ſeeds of either wheat, barley, or any other grain, ſown at the ſame time in the ſame land containing the vegetative principles of all of them; has in their vegetation produced any one plant, participating with the properties of either of the other, by receiving their nurture together from the ſame ſourſe.

No. XXIII.

When ever the ſmall pox has taken effect upon the blood, either previous to the eruption, or, at the time of its appearance a fever ſui generis, conſtantly attends; without which, no individual has ever had the diſeaſe, either naturally, or by inoculation; tho it is poſſible, it may have been ſome times ſo ſlight, as to have eſcaped the notice of an inaccurate obſervor.

No. XXIV.

The fever has been often moſt violent, even where there has been the feweſt eruptions, and alſo where thoſe have been of the beſt ſort.

No. XXV.

This attendant fever whether violent or moderate; when uninterrupted, conſtantly ceaſes on the expulſion of certain eruptions of a particular nature; and equally ſo, whether the eruptions are many or few.

No. XXVI.

Inſtances have happend, in which the fever has gone of without a ſingle eruption; and the perſon ſo recovered, has afterwards lived in the midſt of infection, without being any ways effected with the diſeaſe by ſo doing.

No. XXVII.

Thoſe to whom this circumſtance has happend after having been inoculated, have been inoculated again, and again, without being infected thereby; tho when no fever has been conſequent on inoculation, the event has been otherwiſe.

No. XXVIII.

Thoſe who have been inoculated, and have had neither fever, or eruption ſucceed it; have not found any future injury to their healths from the mixture of that matter

with their blood, which was uſed with an intent to infect them.

No. XXIX.

Thoſe who have had the fever in conſequence of inoculation without its being ſucceeded by eruption; have not only been thereby ſecured from future infection; but have enjoyd as good health after it, as thoſe in whom the eruption has regularly followed the fever.

No. XXX.

When once the variolous matter has taken hold of the circulating fluids, experience has proved, that no more effect can be produced in the body by additional infection; tho the force of that it had received is liable to be immensley augmented after its reception, by an improper treatment and a variety of both external and internal cauſes; but the communication of a ſecond infection, while a former is in action, has no more exiſtence in nature than a ſuperfœtation.

No. XXXI.

The more early the eruption has appeard after the acceſs of the fever from inoculation, the milder in general has been the diſeaſe;

diſeaſe; but the contrary follows when the infection has been naturally acquired.

No. XXXII.

The more the patient has been exhauſted within the limits of his ſtrength before the acquiſition of the ſmall pox; it is generally obſerved that the diſeaſe has been the lighter.

No. XXXIII.

In the old method of treating the ſmall pox, the patient was confined conſtantly in bed or a warm air; hot cordials were frequently exhibited; opiats were adminiſtred freely; the body was kept in a ſtate of reſt; and a laxity of the bowels in adults was dreaded as a moſt dangerous conſequence.

No. XXXIV.

By the modern treatment of this diſeaſe, the patient is kept up, and cool air cannot be too freely admitted; every thing heating is forbid, and whatever is cooling recommended. Opiats are not called for; but on the contrary, gentle motion and rather more than a laxity of the bowels are ſtrictly enjoined.

No. XXXV.

Perſons having the ſmall pox by inoculation under the modern treatment; tho they are at a certain time of the diſeaſe indubitably capable of ſpreading the infection are yet infiniteley leſs ſo; than thoſe who have acquired it by natural infection, or who have received it by inoculation and have been afterwards kept too warm, and treated in the old manner.

No. XXXVI.

The infectious matter of the ſmall pox when firſt ſeperned from the blood, is highly coſtic thin and lymphatic; tho by the ſtagnation of other juices with it in the obſtructions it occaſions; inflamation is brought on, which terminates in pus; by the tenacity whereof, it keeps its quality for the communication of infection much longer than it poſſibly can do in its lymphatic ſtate; but it does not infect with greater, if it does with equal certainty.

No. XXXVII.

When any particular diſeaſe is epidemic, if the ſmall pox invades at the ſame time;

it

it generally partakes some thing in its nature of the prevailing epidemic.

No. XXXVIII.

Bodies implete with foul humours and subject to fevers at particular times of the year; suffer more and are more endangered by being inoculated at those seasons; than they would be, if they chose other months for that purpose.

No. XXXIX.

In foul habits of body, tho it be dangerous to inoculate the small pox; yet is it much less so, than for them to acquire it by natural contagion; but if such are to be inoculated, the less their humours are previously stired up with medicines, by way of preparation, if they are not effectually corected or discharged by them; the less will they be liable to give interruption in the course of the disease from inoculation.

No. XL.

Tho inoculation may be safely undertaken at any time of life, from the first month to seventy years or upwards; yet are the times in which infants are subject to dentition, and that of the periodical visitation in the

sex

ſex both objectionable, and demand particular attention; if we would guard our practice with that precaution as may juſtly entitle us to expect ſucceſs.

No. XLI.

The ſubſtance of the puſtules in the natural ſmall pox where ever ſituated, by the heat of the body or ſome other cauſe, as the diſeaſe advances conſtantly changes in its nature; and in a certain number of days becomes moſt highly purilent, then drys into ſcabs and falls off; or elſe, by its retroceſſion into the circulating blood, excites a new fever of a very different nature to the former; and as the one or other of theſe events happen, not only the ſafety or danger of the patient at that critical time of the diſeaſe, but alſo, his future good or bad health depends.

No. XLII.

In the worſt ſort of the natural ſmall pox, the conſtitution relieves itſelf in adults by a copious pthyaliſm, and in infants by a diarrhea, either of which being ſuppreſsd generally brings on the worſt of conſequences.

No. XLIII.

No. XLIII.

The number and conſequence of the puſtules, always varies according to the temperature and treatment of the patient after receiving the infection, until and during the time of the eruption; rather than from the nature quality or quantity of the infections matter; or from the natural habit of the diſeaſed before its reception.

No. XLIV.

In the natural infection, the greateſt danger is generally at the criſis or change of the fluid in the puſtules into pus; in inoculation, all the danger, if any, is at an end when the eruption is compleated; provided the proper regimen be continued until they are dried into ſcabs.

No. XLV.

By the natural ſmall pox, the eyes are often loſt; the face is ſo ſpoild as ſcarcely to be known for the ſame; and the beſt of conſtitutions have been frequently deſtroyed by it: While under the new method of inoculation there is not an inſtance of either of theſe injuries.

No. XLVI.

The ſmall pox is obſerved to be more fatal to the black than the white people even in the ſame climate; and in England it has been obſerved, that people in general of a fair complection have it more favourably than thoſe of a dark one.

No. XLVII.

From the paucity of puſtules conſtantly attending the new method of inoculation, and the great effects conſequent on the timely and proper uſe of Mr. Suttons ſpecifics; it is probable that their compoſition or adminiſtration may be ſo improved by ſome skilful chymiſt or phyſician; that a diſcovery may be made, on which we may certainly rely for a cure of the ſmall pox with out any eruption; was not the appearance of a few puſtules always requiſite to certify the patient of his having had the diſeaſe; there being no ſymptom but the eruptions, by which the fever proper to this loathſome diſtemper can be indiſputably aſcertained; tho the particular fetid ſmell of the breath, which frequently accompanies it is truely ſingular.

No. XLVIII.

In the natural ſmall pox, if the puſtules are not confluent they are generally numerous; but in the inoculated under the uſe of proper medicines and treatment, they are ſeldom more, than patients would wish to have for a conviction of their future ſafety.

No. XLIX.

From experience we are convinced that the ſmall pox may ſafely be undergone at any time of the year under the care of the skilful; that it is a diſeaſe in its own nature or by accident, evidently liable to be more or leſs contagious; and that it requires a certain temperature of the air and ſpecies of aliment for its cure. It is of conſequence therefore moſt dangerous in ſuch ſeaſons wherein it is epidemic; in which other morbid humours are moſt liable to be in motion and join with it; in which the temperature of the air is moſt diſpoſed to encreaſe its activity; and, in which there is the greateſt want of thoſe particular aliments; which are found moſt effectual in medicating the humours againſt its force.

No. L.

Till Mr. Sutton practiced the new method of inoculation, it was not practiced by any

in England; tho practicioners in general, as well as particulars, had long before began to reject the uſe of the warm regimen; the extreme repugnancy to which in Mr. Suttons method, was ſuch as ſoon gave an alarm and rouſed univerſal amazement; but its uninterrupted ſucceſs has now eſtabished its general uſe, againſt dogmatic opinion, and all oppoſition.

No. LI.

The skin and kidneys are two of the principal emunctorys of the body, are auxiliarys to each other; and often do each others duty in the preſervation of health and the cure of diſeaſes.

No. LII.

External warmth promotes perſpiration and decreaſes urine; on the contrary gentle motion in very cool air, leſſens the cutaneous diſcharge, and increaſes that by the kidneys.

No. LIII.

The ſerum of the blood, is depurated by urine as well as by ſweat; and the matter of diſeaſes naturally obſerved to paſs off by the skin, frequently changing its courſe

is expelled by the kidneys: and ſo on the contrary.

No. LIV.

Boils and abceſſes were a few years ago obſerved more to follow the inoculated than the natural ſmall pox; and were looked upon to be cauſed by the mildneſs of the fever under inoculation not having force ſufficient to expell the variolous matter from the blood.

No. LV.

After inoculation in the modern manner boils and abceſſes very rarely follow; and not one time in a hundred ſo often as they do the natural infection.

No. LVI.

Mercury and its preparations not only operate as general evacuants, but ſpecifically alter the ſalivary and glandular juices; as is evident from their power in the cure of diſeaſes ariſing from their particular acrimonys; which other medicines of the ſame claſs of evacuants are incapable of affecting.

No. LVII.

No. LVII.

Salivation or purging brought on without mercury, will not cure diſeaſes; which are cured thereby when they are the effects of mercury; and mercury when united with the blood will perform the ſame cures without either ſalivating or purging.

No. LVIII.

We have the authority of the illuſtrious Boerhaave, that the ſole intention of cure in the firſt ſtage of the ſmall pox, conſiſts only in removing the inflammatory ſtimulus; in curing of the then preſent diſorder, or hindering its further progreſs; and thereby preventing a future ſuppuration and gangrene: which he tells us may be done by a univerſal antiphlogiſtic method; or by correction with ſpecifics; adding, that there is not only reaſon to hope, that ſuch may be found; and that thence great advantage may ariſe to mankind; but alſo, that though ſuch intention of cure has been rarely thought of; inſtances were not wanting of ſuch meaſures having proved ſucceſsful, even when phyſicians had uſed them and been ignorant of the diſeaſe.

No. LIX.

When nature has been regular in her mode of terminating any diſeaſe; the skilful and caution phyſician, conſcious of the danger of experiment, has been ever ſtudious to aſſiſt, rather than direct her efforts; and in no diſeaſe more ſo, than in the ſmall pox: well knowing that eſtabliſhed practice is a juſtification for all events; that the world in general forms its judgement from them, and is ever ſlow in giving due merit to the good intentions of the ingenious in any novel pactice; unleſs the attending ſucceſs demands it.

No. LX.

Whether the Sutton practice be right or wrong, is idle to diſpute while conſtant ſucceſs attends it; and its having not failed in forty thouſand inſtances, ſpeaks more in its favour, than the rhetorick of the whole world can urge againſt it.

No. LXI.

Greater ſucceſs cannot attend any practice than for all to recover; yet as ſome trivial inconveniences may have attended ſuch ſucceſsful practice in particular caſes; it is poſſible, that by the light of longer experience,

rience, or a due conſideration of attendant circumſtances; by ſome one of general medical knowledge who may be maſter of the remedies; ſuch improvements may be made therein, as may prevent even thoſe trivial inconveniences.

No. LXII.

Many are the diſcoverys we owe to accident; and ignorance has often aſſumed courage; which general knowledge without particular would have naturally reſtrained.

No. LXIII.

No confidence can rationally be placed upon the judgement of any one, who uſes only the noſtrums of others; as in conſequence of his ignorance in the medicine he gives; he muſt be at a loſs to determine whether any uncommon effect that may happen in the courſe of its adminiſtration, be the effect of nature or the remedy; and of the direct means, as well as of the propriety, of puting a ſtop to ſuch effect.

No. LXIV.

To reject or diſregard a diſcovery, becauſe the inventor of it may want general knowledge; is a conduct demonſtrative of envy

envy and pride, and of a diſpoſition to injure ourſelves; rather than to do juſtice to the merit of others.

No. LXV.

Rashneſs crowned with ſucceſs, often confirms the ſuggeſtions of reaſon; and ſometimes holds out lights reaſon would never ſuggeſt; it bears down all prejudice of opinion, and leads theory captive to experience.

No. LXVI.

The rashneſs of the ignorant, frequently lays an obligation upon the ingenious; and enables them to make high roads, of narrow paths.

No. LXVII.

As the world have long been informed by the celebrated Boerhaave, of all that experience now ſhews to be neceſſary in the cure of the ſmall pox; are not the eminent in the faculty more deſerving of cenſure for diſregarding his inſtructions; than the ſucceſsful Mr. Sutton, for having had an implicet faith in his great maſter, and boldly making the experiment?

No. LXVIII.

Tho Mr. Sutton be exculpated of being the inventor and only one acquainted with the new practice of inoculation; he can not be acquitted of introducing and eſtabliſhing the art.

No. LXIX.

When men with good intentions are ignorantly raſh, and by ſuch their raſhneſs profit the world in general; ought they not to have the honour of the accidental event in their favor, as well as to be reſponſible for it, had the contrary happened? — Though the ſagacity of Boerhaave, through the thick cloud of bigotry and ignorance, ſuggeſted and pointed out the light; to the faith and perſeverance of the Suttons, in entering upon and treading the path; we owe its benefits.

To CÆSAR *therefore the things that are* CÆSARS.

QUERIES,

Founded on the preceding

FACTS;

With a view to diſcover the true nature and cauſe of the ſmall pox: and, of the ſeveral phenomena ariſing in its treatment under the new method of inoculation.

Of Natures Secrets, which Contagions show;

" *What can we Reaſon, but from what we know?* "

POPE.

QUERIES,

founded on the preceding

FACTS;

With a view to discover the true nature
and cause of the Asiatic pest, and of
the several phenomena attending its
treatment under the new
method of inoculation.

QUERIES.

No. I.

Is, or is not, the primary cauſe of the ſmall pox, a foreign matter blended from our births with the conſtituent parts of the human blood; on a ſeparation of which from the maſs, all future ſecurity from the diſeaſe depends?

No. II.

May not the primary cauſe be a natural and innate property in the maſs of blood, or in ſome of its conſtituent parts; whereby it unites with certain unobſerved accidental ſecundary cauſes, and therewith generates that particular fever which always preceds or accompanys the variolous eruption; unleſs the blood by its union therewith has been once changed by ſuch fever?

No. III.

If the primary cauſe be a matter foreign to the blood itſelf; how happens it when

that

that matter is once ſeperated from the blood, and the blood is thereby rendered immiſcible with it again, that children born of parents whoſe habits have been ſo freed from it, ſhould be liable thereto; when the blood of thoſe whoſe mothers have had the diſeaſe while entient with them is not ſo: It being a known truth, that what nature has not, ſhe cannot give?

No. IV.

If the primary cauſe be a natural and innate property only, in a part, or, the whole maſs of blood, to attract certain ſecondary cauſes, and thereby to produce the ſmall pox. Is, or is not any eruption requiſite?

No. V.

Does, or does not, in that caſe the ſafety of the individual from all future ſuſceptibility of the diſeaſe, depend on an alteration of the whole, or, a part of the animal fluids produced by the attendant fever; or the acceſs of ſuch certain accidental cauſes as may excite it?

No. VI.

If the future ſafety of the patient does not depend on an alteration of the blood

by

by the fever; how are those secured from future infection, who after having been inoculated have had the fever only without any eruption; while those who after inoculation have had no fever; continue susceptible of the disease by fresh inoculation or otherwise?

No. VII.

Do not fevers often change the state of the blood, without exciting any critical, or at least observable separation from it? and, are not those changes produced by different fevers, greatly different from each other?

No. VIII.

Are not fevers esteemed to be the instruments of nature, for correcting, as well as expelling the cause of distempers?

No. IX.

If the change wrought on some innate property of the blood, or one or other of its parts by the fever, be the reason of all future security from a susceptibility of the small pox: Where is the difficulty to account for the future safety of the patient without any eruption? For the reason why the child may undergo it in the time of gestation? Why parents who have passed it

it, and are no more liable thereto, or may propogate offspring that may? And, why those who have gone through the diſeaſe are incapable of acquiring it a ſecond time?

No. X.

As the maſs of blood yields all the ſecretory juices; and its neceſſary waſte in making thoſe ſecretions is conſtantly ſupplyed from the aliments we eat, Is it not evident of what importance a proper choice of food muſt be, in the cure or prevention of ſuch diſeaſes, as depend upon the fluids; and of the changes they muſt undergo by means of reſt and certain degrees of motion?

No. XI.

Do not fevers operate on the body and change its fluids mechanically, even as medicines?

No. XII.

May not medicines ſeaſonably adminiſtred, produce the ſame alteration on the fluids by their natural powers, as nature herſelf does, by the means of fevers?

No. XIII.

As the ſmall pox virus circulates with the blood a certain time before it manifeſts its effects,

effects, if inoculation had no other advantage than what might ariſe from our knowledge of the time of receiving the infection; as we are thereby immediatly put upon our guard againſt every intemperance; have we not from that knowledge alone a right to expect the greateſt good?

No. XIV.

Does, or does not, the eruptive fever of the ſmall pox entirely ceaſe on the appearance, or completion of the eruption?

No. XV.

Does, or does not, a new fever ariſe on the maturation of the puſtules in the natural ſmall pox? And does the ſame thing happen under modern inoculation?

No. XVI.

Is, or is not, the matter of the puſtules in the ſmall pox purilent on its firſt eruption, or, does it become ſo in its nature, as their maturity advances?

No. XVII.

May not the ſmall pox matter by being communicated to the blood before it begins

to acquire a putrid ſtate; be ſufficiently active in its own nature; to bring on that change which is neceſſary to ſecure it againſt all future infection, without giving to it that corrupt putrid nature, which conſtantly comes on in the more advanced ſtate of the natural ſmall pox; and is it not a material cauſe of the ſafety evident in inoculation?

No. XVIII.

Does not the contagious effects of the effluvia from the natural ſmall pox, depend upon the volatiliſation of the variolous matter in its putrifactive ſtate; excited by the common method of keeping the patient hot, in order to force out and keep the eruptive matter on the ſurface of the body?

No. XIX.

Do not many ſpecies of matter naturally inert and fixed in their own nature, ſo change by heat as to become exceeding active and volatile; and to be capable of manifeſting effects they could not produce, without the aid of heat?

No. XX.

Are not the months of march and ſeptember which have been generally recommended for inocu-

inoculation, moſt unfit for thoſe who require any particular preparation; tho' perhaps moſt unexceptionable for healthy ſubjects? Is it not more eſay for invalids to ſupply the defects of winter; and to guard againſt the exceſs of heat in ſummer; than ſucceſsfully to combat the ſmall pox with another diſeaſe; or, in a ſtate of the air which may have a tendency to propagate its infection?

No. XXI.

Does not the cool regimen uſed in the modern method of inoculation, and the conſequent temperature of body thence produced; prevent the morbid humours from becoming volatile in a ſufficient degree to produce effluvia; and are not inoculated patients thereby prevented from ſpreading infection in the ſame degree as thoſe do who contract it naturally; if it be not ſo, how happens this event?

No. XXII.

Is not the Itch capable of being contracted by effluvia in a warm bed, tho' in the open air it is ſo only by contact? If the fixed matter of the Itch can be ſufficiently volataliſed ſo as to infect at a diſtance by the means of heat; is it at all more wonderful that the volatile infection of the

ſmall pox ſhould be ſo fixed by cold; as not to paſs by exhaletion?

No. XXIII.

As the blood of a variolous perſon will not communicate the ſmall pox by inoculation; and the matter of the puſtules or the ichor from the inoculated part moſt certainly will: Is it not evident, that the infection is an acquired property to the humours in conſequence of the fever; and, proves more or leſs ſo, as it is more or leſs volatiliſed by heat?

No. XXIV.

Does not the retroceſſion of this matter into the blood, when in conſequence of ſtagnation and heat it is become putrid; excite much worſe ſymptoms than it was capable of doing before it was ſecreted from the blood: If it does, from whence is it that ſuch horid effects can ariſe, but by its being ſo changed by ſtagnation and heat?

No. XXV.

Is not the maturation or criſis of theſe puſtules, the moſt dangerous time of the natural ſmall pox? And if it be ſo, what is the reaſon thereof?

No. XXVI.

No. XXVI.

Is not the danger and inconvenience under the modern method of inoculation generally at an end when the eruption is completed? And does not the number of the eruptions and their future progreſſion, depend upon the treatment of the patient before and at the time of their appearance? May not a little improper aliment; or a neglect of proper medicines at thoſe times; render a diſeaſe that would be mild, moſt highly troubleſome? And have we not inſtances of proper diet and medicines taking off moſt threatening ſymptoms, and happily calming the moſt alarming appearances?

No. XXVII.

Have not the want of ſuppuration in the puſtules, frequently produced diſtinct mortifications in the natural ſmall pox; and is not that matter which ſhould aſſiſt the ſuppuration diſſipated or rendred highly acrid and corroding by too great heat?

No. XXVIII.

Does not the matter of the puſtules in the natural diſeaſe, by a retroceſſion into the blood excite a general putreſency of the fluids, and a broken texture of the whole maſs?

No. XXIX.

No. XXIX.

When patients in the confluent ſmall pox after the greateſt danger eſcape with life, is it one time in ten an eye is not loſt; the face ruined; or the conſtitution ſpoiled? And, have ever ſuch effects happened from modern inoculation?

No. XXX.

Does not the ſalivation and flux attendant on the natural ſmall pox, and the benefits thence ariſing; demonſtrably point out the neceſſity of a free glandular ſecretion; of a laxity of the bowels; and of all thoſe means which attemperate or correct the acrimony of the lymph; while the conſtitution is labouring to get rid of the ſmall pox virus; and does it not ſhew of what uſe they muſt be in its preparation for it?

No. XXXI.

Is not the different colours of the skin in different individuals; owing to the particular diameters of the veſſels in each; by means whereof the oily or groſſer particles of the humours are more or leſs admitted? Or is the different effects of the ſmall pox and colour of the skin which has been obſerved, and attends theſe people, owing

to

to a difference in the nature of their blood, or to any other and what cauſe?

No. XXXII.

As the modern regimen uſed in the ſmall pox retards perſpiration and promotes urine; may not the paucity of eruptions attending the new method of inoculation, be much owing to, and reaſonably expected, from that treatment?

No. XXXIII.

As the urine is the waſhing of the blood; and as thoſe matters which are ſubject to lodge in the cuticular glands may be diſcharged by thoſe of the reins; Is it at all wonderful, that by a regimen which rather cloſes the outlets of the skin, and determines to the kidneys; that the matter of a diſeaſe which is ſoluble in the urine ſhould be excreted thereby?

No. XXXIV.

Are not the firſt and ſecondary fever attending the ſmall pox, eſſentially different one from the other? Is not the firſt an inflametory; and the laſt a putrid fever?

Is

Is not the first the product of nature; and the last the consequence of mismanagement?

No. XXXV.

Are not these two fevers as they differ in nature, totally independant each of the other; tho' nature if forced in the first, seldom fails to suffer by the last?

No. XXXVI.

Is not the matter seperated from the blood in the variolous eruptions, brought into a state of purilence from a salutary fluid, by the force of a particular species of fever? And is not the purilence a consequence or flower of the fever; rather than a seperation of the original cause or seeds of the small pox innate in the blood?

No. XXXVII.

If the matter of the pustules be the consequence or flower of the inflametory fever, rather than its seed or cause; and if it be also liable to a retrocession and thereby to bring on a new putrid and dangerons fever: Is it not right, to stop the growth of a cause that is productive of such consequences, by cuting it down before its arival at maturity; since experience now shews it may

may be done with ſafety and to the greateſt advantage; it being evidently not purilent but in its advanced ſtate; and its retroceſſion at that time of the moſt fatal conſequence, tho before it acquires that putreſency it may be ſafely carried off by the common emunctories?

No. XXXVIII.

Does not the appearance of the diſeaſe under inoculation, and the ſucceſs attendant on the new method of treating it; remove all doubts of the propriety of ſuch practice?

No. XXXIX.

Are not certain acrimonies in the fluids corrected and deſtroyed by certain medicines without any evacuation; and in a manner unaccountable? Does not ſulphur ſpecifically deſtroy the acrimony of the itch? Oil the venom of a viper? And mercury that of the venereal diſeaſe; even without purging ſalivating or producing any other ſenſible diſcharge; as certainly as the bark cures intermittents, and by means as myſterious? And if ſo, why may not the variolous virus, by the like means ſuffer the like change?

No. XL.

Are not certain ſtates of the humours neceſſary, to enable medicines to manifeſt their power in the cure of certain diſeaſes; and eſpecially in all thoſe in which they operate in any ſpecific manner?

No. XLI.

Does not a natural tendency in the membrana adipoſa to generate and retain putreſcency more than the other membranes of the body; and the mildneſs of the ſmall pox after ſalivation or any general depletion; fully demonſtrate why abceſſes and tumours are leſs frequent after the modern than the antient method of inoculation; or natural infection? And does it not indiſputably manifeſt, the propriety and rationality of the preparation now uſed to fit the body for inoculation?

No. XLII.

Have not the immediate uſe of plaiſters to the inoculated part, as practiſed in the old method, frequently prevented the variolous matter from uniting with the blood? Is it not more likely for the infection to take effect when the pores are not obſtructed with any oily covering or when the humour

intended

intended to be communicated is attracted from it; by a discharge from the part?

No. XLIII.

Does not the plaister hinder or augment the appearance of infection, and keep the inoculated part from being so true an index of its progress and of the disease; as it evidently is when left to itself?

No. XLIV.

Can there be any and what use in plaisters to draw out that which it is our intention to communicate to the blood? Are not their use a counteracting of our own intentions?

No. XLV.

Are not the effect of medicines variable according to the different methods of preparing them, and the manner and times of their use?

No. XLVI.

If a medicine has a specific power in the cure of any one disease, or at the end of one fever, of intercepting the access of another arising from the former; does it thence follow that its being administed to the

patient before the approach of the firſt, ſhould prevent its invaſion? Or muſt it be deemed inefficacious in the virtues aſcribed to it if it is incapable of that alſo? Is there no difference between preventing and curing a diſeaſe? Or does it follow that the means which are effectual for the one, muſt be ſo alſo for the other?

No. XLVII.

Have not many perſons who are liable to catch the ſmall pox; at one time lived in the midſt of its contagion without taking the diſeaſe; who have readily caught it at an other? and is it not thence evident; that the preſence of a certain ſtate of the blood muſt be neceſſary to enable the conſtitution to receive the infection; as well as, that by finding out the cauſe why contagion will not always take effect; we may hope to diſcover an antidote; that will at all times enable the body to reſiſt its influence?

No. XLVIII.

Does not the variolous infection by its own action on the blood; evidently produce a change therein? If it does; is it not equally as reaſonable that the blood ſo changed ſhould receive impreſſions, from medicines it was incapable

incapable of before, as it is, that it should acquire power to produce or reſiſt effects itſelf; which it could not till it had ſuffered ſuch change?

No. XLIX.

Are not certain cauſes requiſite to be preſent for the operation of every antidote; without which its effects muſt be imperceptible? Or, will it follow, that becauſe theſe effects do not enſue when thoſe cauſes are abſent; that when they are, they will not prove themſelves to be antidotes?

No. L.

As the moſt violent fever frequently attends the ſlighteſt and kindeſt eruption, is that violence owing to the viſcoſity and unfitneſs of the blood at that time to undergo the diſeaſe; or to the nature of the acting matter; as it is evident it cannot be to its quantity, unleſs it be admitted that it is totally changed or ſubdued by the force of the fever?

No. LI.

May not the violence of the fever when it procedes a ſmall and favourable eruption, be reaſonably accounted for from ſuch cauſe;

as ſecretions from thick and viſcid humours muſt be made with difficulty? If it be not ſo; to what other cauſe can ſuch circumſtance be aſſigned?

No. LII.

Is not the difference of the prognoſtic from the early appearance of the eruption in the inoculated and natural ſmall pox; to be accounted for from the ſame cauſe? Or, is it owing to the one being received inſtantly into the lymphatics of the skin, and the other into the habit by the reſpiratory organs?

No. LIII.

Does not infection on the body like yeſt in liquors; operate by exciting a certain motion in the blood; which when once ſtired up, is all that infection can do? As heat and cold promotes or checks the effect of yeſt on the liquors; does not the different temperaments of different habits, make the diſeaſe produced by the infectious matter; appear with different degrees of violence? If this be not the caſe, how happens it, that perſons who have received into their blood the ſmall pox contagion

cannot while it is mixd therewith, receive an accumulation of infection? Which is proved to be fact by innumerable experiments.

No. LIV.

Does not the depletion uſed previously and preparatory to inoculation; as alſo, the ſimplicity and mildneſs of the fever conſequent thereon; render the eruption more expeditions and eaſy, than it is in the natural ſmall pox? And is not the danger from its early appearance in the natural infection, owing to the want of that preparation; to the violent agitation of other humours with the variolous matter; to the ſtate of the infectious matter communicated; or the reception of it at firſt into particular veſſels?

No. LV.

Is there not a manifeſt difference in the effect of mercury when externally applyed or internally taken? And may it not be the ſame as to the ſmall pox infection?

No. LVI.

Have not the boils and abceſſes conſequent on the old method of inoculation; been rather cauſed by communicating the infection in

in too purilent a ſtate, and into the membrana adipoſa out of the force of circulation, inſtead of the cuticular lymphatics; rather than to any defect of febrile force after inoculation; as theſe ſymptoms do not follow after the preſent mode of practice? And does not the continued health of the patient after inoculation where it takes no effect; demonſtrate this?

No. LVII.

Do not theſe circumſtances manifeſt the neceſſity and uſe of preparation for the ſafe reception of the ſmall pox virus? Do they not account for the mildneſs of the diſeaſe from inoculation over that from a natural infection? And does it not ſhew the preference of the new, to the old method of preparing for the diſeaſe?

No. LVIII.

Was not the ſpecific quality of mercury, once thought to reſide in its ſalivating power alone? And have we not long ſince been convinced of the contrary? Who does not know that in ſome caſes its ſpecific properties are increaſed, the more that power is reſtrained; while in other inſtances it is quite the reverſe?

No. LIX.

No. LIX.

Does not mercury manifeſt its ſpecific property by its effect, even when united with purges; as it is notorious that thoſe purges without it, cannot perform the ſame cures they do with it, though they equally operate as purges?

No. LX.

Is the knowing mercury, antimony, or a mineral acid to be the baſis of any ſpecific medicine, a ſufficient foundation for any man to aſſert, what ſuch particular medicine really is? Or, Is it not requiſite in order to warrant ſuch aſſertion, and to have the knowledge of uſing ſuch medicine ſucceſsfully; to be acquainted alſo with the proportions uſed in the compoſition; with the mode of its preparation; and with its ſeveral articles; before any one can ſay, he is ſo far maſter of ſuch remedy, as to be able with juſtice to recommend or degrade it to the public?

No. LXI.

May not one and the ſame baſis under different modifications, or with different unions, conſtitute a medicine deſtructive as well as ſalutary?

No. LXII.

Are not thoſe, who practice upon a preſumption of knowing medicines they know not; making experiments at the hazard of the lives of others for the promotion of their own intereſt; and is it not diſhoneſt and unjuſtifiable in any one ſo to do?

No. LXIII.

When phyſicians give medicines without knowing what they are; muſt not their good ſucceſs be a matter rather of chance than judgement? — May not obſervant nurſes with ſuch medicines commence practice, and have as good a proſpect of ſucceſs, as any doctors? Is not their uſeing ſuch medicines, a full confeſſion of their opinion of their merit; and of the inſufficiency of their own knowledge to ſubdue the diſeaſe without them?

No. LXIV.

Was one in a million to have the ſmall pox a ſecond time; could it weigh one grain in the ſcale of reaſon againſt the uſe of inoculation, or any tryed or probable means to anticipate its danger? How idle muſt it be from ſuch a fact; and much more from a report of it only; for

each individual to urge, that he may be the one; and, for all from thence to reject; the evident benefit offered them by the light of experience? Would it not be as ridiculous as refuſing a thouſand to one in ones favor; becauſe it is poſſible there may be one in a million againſt us? — And, as Mr. Ambroſe Parry has told us of a child being born with two heads; might not every woman with equal reaſon forſwear marriage, for fear of the ſame unnatural event?

— No. LXV.

On the preceding obſervations ſeperatly and jointly conſidered: Does it not appear that the infectious matter of the ſmall pox; Is a venom of a particular nature? Of a thin fluid coſiſtence? And of a very ſubtil acrid quality? — That it is highly volatile with a ſmall degree of heat; and impedable in its action by the force of cold? — That its infection is retainable in certain viſcoſitys and no way dependant on corruption for its force? — That it is capable for once, of perfectly uniting itſelf with the blood under ſome certain circumſtances; but not without them? — That being ſo united either in a greater or leſs quantity; it always acts upon it as an alterative; and produces in every conſtitution certain effects; which are ſalu-

tary or otherwiſe, as the nature of the maſs; at that juncture in that particular habit is liable to receive benefit or injury from ſuch change? — That by its action on the blood when united with it, it deſtroys that innate property therein, which for once gives it power to withhold it; ſo that at no future time it can again affect it? — And, that the blood by the means of medicine and regimen; may be more or leſs enabled to reſiſt, undergo, and moderate the action of the venom upon it; even before its neceſſary property to withhold it has been deſtroyed by its action thereon? — Is it not evident alſo; That the operation of this particular venom upon the animal fluids is always manifeſted by a fever; which fever is the very eſſence of the diſeaſe; and either corrects its cauſe, or ſeparats from the blood, certain depoſitions of a fluid, which carries will it, all that was infectious in the conſtitution? and, which was not infectious in itſelf while it was mixed with the blood; but becomes ſo on its ſeperation from it? — Does it not likewiſe appear, that this humour which is ſo ſeperated from the maſs at the end, and by the means of the fever; if before its ſeparation it is uninterrupted in its courſe; conſtantly forces itſelf to, and lodges in the skin? — That there from its confinement and change; by ſtagnation and heat, if it be

not

not dryed up or diſcharged; it is gradually reabſorbed; and by its retroceſſion into the habit, generates the ſecondary fever; which is another diſeaſe independant of the former? — And do not the preceding obſervations ſhew; that by a timely and proper uſe of external cold, gentle motion, and ſpecific evacuants, the virulence of the ſmall pox virus may not only be reſtrained; but may likewiſe be kept from fixing on any part of the body; and be happily expelled by the common emunctorys?

Is not this the true nature and action of the variolous infection; and the principles and grounds of the preſent ſucceſsful method of conducting the ſmall pox under inoculation? — Is it not clear we have a foundation to ſay; that this diſcovery has been the effect of chance; and its eſtabliſhment owing to a perſeverance in an hazardous experiment, which phyſicians of eſtabliſhed reputation were afraid to try?

Laſtly, Is not the preſent treatment of the ſmall pox under inoculation; very ſimilar to the improvement in the cure of the veneral diſeaſe; which was ſome time ſince recommended to the world by the late doctor Douglas? Who, being convinced of a now eſtabliſhed

eſtabliſhed truth laid down by the before mentioned Boerhaave, namely, *ſalivation does not cure the venereal diſeaſe; but follows becauſe the diſeaſe begins to be cured*, moſt wiſely deſiſted from a perſeverance in the ſevere practice of ſalivating; and artfully kept charging the blood for a given time with its ſpecific corrector; the action of which he diverted from the ſalivary glands, by the ſtimulation of others; and by that means; while, with the mercury he gradually kept leſſening the acrimony in the blood till he had wholy deſtroyed it; he carried of the mercury by a conſtant repetion of cathartics; and, reſtored to his patient the bleſſing of health; without thoſe miſerable ſufferings which too frequently attended the common method of cure; an effect he could not have obtained, by any other remedies of the ſame ſenſible operation; unleſs they were alſo poſſeſed with the ſame ſpecific qualities.

THE END.